

MATING HABITS OF SPHECIUS SPECIOSUS, THE CICADA-KILLING WASP.

BY WM. T. DAVIS, Staten Island, N. Y.

On July 31, 1919, the writer was on the grassy lane leading down to the shore of Long Pond, south of Wading River, Long Island, N. Y., when he observed many males of *Sphecius speciosus* flying about. They would station themselves on the tops of plants, or on small bushes, and when a female came near they would fly after her. Each male had a particular flower head, or other lookout, to which he would return after chasing a female, and some that were watched went back to their chosen stations with great regularity for over a half hour. The mating takes place in the air and is very brief. Twelve of these matings were observed. Sometimes the pair fell to the ground, but flew away quickly.

On the third of August the pond was again visited, and the wasps were still about the same place on the grassy lane, and the males chasing the females. Several of them were observed to fly from their place of out-look, seize a female in mid air, and then after leaving her return to their particular station. While no tunnels dug by *Sphecius* could be found where the mating was going on, in other places, higher and dryer, there were several, and in one instance it appeared from the rounded groove at the opening of the burrow, that a cicada had been brought in. The greatest activity in collecting cicadas on Long Island occurs about the middle of August or a little later, and many cicadas have, fortunately for the species, commenced to lay eggs before their sudden demise. The female *Sphecius* seeks them, not by the song of the males as is sometimes stated, but by flying carefully along the limbs of trees and up and down the trunks, and so catches both sexes. In some of the burrows dug out, there were many more females than males. When a cicada is discovered and stung by a wasp, the pair sometimes fall to the ground, but often the wasp succeeds in holding fast to both the tree and the cicada. If the cicada is too heavy to be transported directly to the burrow, the wasp climbs up the trunk of a tree

with its victim, holding the cicada by the legs with the smooth back downward, so that it can be slid along more easily, and then flying from its point of vantage, it may make a considerable distance toward its nest before being borne down again by the heavy burden.

In *Insect Life*, Vol. IV, p. 248, a digger-wasp is shown by Dr. Riley holding a cicada with the legs downward. This figure has been copied in Howard's *Insect Book*, and in the *List of New Jersey Insects*. In the writer's experience the cicada is held with the legs upward, thus giving the wasp a firmer hold and making transportation more easy. This was pointed out in some notes on the habits of the larger digger-wasp, printed in the *Canadian Entomologist*, for January, 1891.

It may be of interest to add that the Cicada-killer on Long Island and Staten Island, collects indiscriminately *Tibicen sayi*, *T. linnei*, *T. lyricen* and *T. canicularis*, often placing more than one species in the same burrow. No doubt the larger *Tibicen auletes* is also captured on occasion. The Seventeen-Year Cicada appears too early in the season on Staten Island to fall a prey to the wasp.

NOTICES.

Subscribers will please note that our April-June issue was a double number (Nos. 2 and 3). Owing to an oversight, 3 was omitted on the cover, although it will be found in its proper place on the first page.

Title page and index for this volume will be issued with No. 1, Vol. XVI, for February, 1921.